WHAT IS CLAIMED IS:

1. A laser diode package, comprising:

a laser diode having an emitting surface and a reflective surface opposing said emitting surface, said laser diode having first and second side surfaces between said emitting and reflective surfaces;

a heat sink having an upper surface and a lower surface, said first side surface of said laser diode being attached to said heat sink adjacent to said upper surface; and

a substrate primarily composed of gallium arsenide and attached to said lower surface of said heat sink.

2. The laser diode package of claim 1, wherein said substrate and said heat sink have approximately the same width dimension.

3. The laser diode package of claim 1, further including a first solder layer between said first side surface of said laser diode and said heat sink.

4. The laser diode package of claim 3, further including a second solder layer between said lower surface of said heat sink and said substrate.

5. The laser diode package of claim 4, wherein said first and second solder layers are made of the same material.

6. The laser diode package of claim 5, further including a third solder layer along said second side surface of said laser diode for attaching said laser diode to another structure, said third solder layer being made of a different material than said first and second solder layers.

7. The laser diode package of claim 1, wherein said emitting surface of said laser diode is substantially flush with said upper surface of said heat sink.

8. The laser diode package of claim 1, wherein said heat sink is made of copper.

9. The laser diode package of claim 8, wherein said heat sink has exterior surfaces with a layer of material thereon for producing solder bonds with said substrate and said laser diode.

10. The laser diode package of claim 9, wherein said layer of material includes indium.

11. The laser diode package of claim 1, wherein said substrate has a top surface that is attached to said heat sink, a bottom surface for attachment to a thermally conductive structure, and side surfaces between said top and bottom surfaces being generally free of contact from any structure.

12. The laser diode package of claim 1, wherein said heat sink further includes a lens mounting structure.

13. The laser diode package of claim 1, wherein said substrate has a height between about 0.003 and about 0.006 inch.

14. The laser diode package of claim 1, wherein package has a package height substantially defined by heights of said substrate and said heat sink, said package height being less than about 0.06 inch

15. A laser diode package, comprising:

a heat sink having an upper portion and a lower portion;

a laser diode mounted to said upper portion of said heat sink; and

an electrically insulative substrate attached to said lower portion of said heat sink and having a width that is approximately a width of said heat sink.

16. The laser diode package of claim 15, wherein said substrate and said laser diode are made from the same basic material.

17. The laser diode package of claim 18, wherein said material is gallium arsenide.

18. The laser diode package of claim 15, wherein said substrate is made from a cleaveable material.

19. The laser diode package of claim 18, wherein said cleavable material is gallium arsenide.

20. The laser diode package of claim 15, wherein said laser diode has an emitting surface, said emitting surface being generally perpendicular to a height dimension of said heat sink defined between said lower and upper portions.

21. The laser diode package of claim 15, wherein said heat sink has uppermost and lowermost surfaces, said laser diode being mounted along a side surface between said uppermost and lowermost surfaces.

22. The laser diode package of claim 21, wherein said electrically insulative substrate is attached to said lowermost surface.

23. The laser diode package of claim 21, wherein said laser diode is substantially flush with said uppermost surface of said heat sink.

24. The laser diode package of claim 15, wherein said electrically insulative substrate has a top surface that is attached to said heat sink, a bottom surface for attachment to a thermally conductive structure, and side surfaces between said top and bottom surfaces being generally free of contact from any structure.

25. The laser diode package of claim 15, wherein said heat sink has exterior surfaces with a layer of material thereon for producing solder bonds with said substrate and said laser diode.

26. The laser diode package of claim 25, wherein said layer of material includes indium.

27. The laser diode package of claim 15, wherein said heat sink width is less than about 0.2 inch.

28. A laser diode package, comprising:

a heat sinking structure having an upper region and a lower region, said lower region including an electrically non-conductive portion for attachment to a thermally conductive structure; and

a laser diode mounted to said upper region of said heat sinking structure.

29. The laser diode package of claim 28, wherein said electrically nonconductive portion and said laser diode are made from the same basic material.

30. The laser diode package of claim 29, wherein said material is gallium arsenide.

31. The laser diode package of claim 28, wherein said heat sinking structure has a generally constant width between said upper and lower region.

32. The laser diode package of claim 28, wherein said upper region is metallic and said lower region is metallic outside of said electrically nonconductive portion.

33. The laser diode package of claim 28, wherein said lower region further includes a metallic portion, said metallic portion and said electrically nonconductive portion being discrete components being attached to each other.

34. The laser diode package of claim 33, wherein said metallic portion and said electrically nonconductive portion are attached via a solder bond.

35. The laser diode package of claim 35, wherein said upper region is metallic, said upper region and said metallic portion of said lower region being an integral structure.

36. The laser diode package of claim 28, wherein said laser diode further includes a solder layer on a side surface opposing said heat sinking structure for attaching said package to an adjacent heat sink.

37. The laser diode package of claim 30, wherein upper region is metallic.

38. The laser diode package of claim 30, wherein said heat sinking structure has a height of less than about 0.06 inch.

39. A laser diode array, comprising:

a plurality of heat sinks positioned generally parallel to each other;

a plurality of laser diodes each of which is located between adjacent ones of said plurality of heat sinks; and

a plurality of electrically insulative substrates attached to a respective one of said plurality of heat sinks.

40. The laser diode array of claim 39, further including a thermally conductive structure positioned below and attached to said plurality of electrically insulative substrates.

41. The laser diode array of claim 40, wherein said thermally conductive structure is soldered to said plurality of electrically insulative substrates.

42. The laser diode array of claim 41, wherein said plurality of electrically insulative substrates are made of gallium arsenide.

43. The laser diode array of claim 40, wherein said thermally conductive structure is a heat exchanger.

44. The laser diode array of claim 39, wherein said plurality of electrically insulative substrates are made from a cleaveable material.

45. The laser diode array of claim 39, wherein each of said plurality of laser diodes has an emitting surface, said emitting surface being generally flush with an adjacent one of said heat sinks.

46. The laser diode array of claim 39, wherein each of said plurality of heat sinks has uppermost and lowermost surfaces, said laser diodes being mounted along a side surface between said uppermost and lowermost surfaces.

47. The laser diode array of claim 46, wherein each of said substrates is attached to a respective one of said lowermost surfaces.

48. The laser diode array of claim 39, wherein each of said plurality of heat sinks has exterior surfaces with a layer of material thereon for producing solder bonds with a respective one of said plurality of heat sinks.

49. The laser diode array of claim 48, wherein said layer of material is indium.

50. The laser diode array of claim 48, wherein each of said plurality of laser diodes is prefabricated with a solder layer on an exposed side surface for attachment to an adjacent heat sink.

51. The laser diode array of claim 39, wherein each of said plurality of laser diodes includes an emitting surface and a reflective surface, said reflective and emitting surfaces being accessible for cleaning.

52. The laser diode array of claim 39, further including potting material placed generally around said plurality of heat sinks.

53. A laser diode array, comprising:

a plurality of laser diode packages each of which includes a heat sink with upper and lower portions, a laser diode bar attached to said upper portion of said heat sink, and an individual electrically insulative substrate attached to said lower portion of said heat sink; and

wherein said heat sinks of said plurality of laser diode packages are soldered to laser diode bars on adjacent ones of said plurality of laser diode packages.

54. The laser diode array of claim 53, further including a thermally conductive structure positioned below and attached to said plurality of individual electrically insulative substrates.

55. The laser diode array of claim 54, wherein said thermally conductive structure is soldered to said plurality of electrically insulative substrates.

56. The laser diode array of claim 54, wherein said plurality of electrically insulative substrates are made of gallium arsenide.

57. The laser diode array of claim 54, wherein said thermally conductive structure is a heat exchanger.

58. The laser diode array of claim 53, wherein said heat sinks have exterior surfaces with a layer of material thereon for producing solder bonds with a respective one of said electrically insulative substrates.

59. The laser diode array of claim 58, wherein said layer of material is indium.

60. The laser diode array of claim 53, wherein said each of said laser diodes further include a solder layer on a side surface opposing said heat sink of said package, said solder layer for attaching said package to an adjacent heat sink of an adjacent package.

61. The laser diode array of claim 53, wherein each of said plurality of laser diodes includes an emitting surface and a reflective surface, said reflective and emitting surfaces being accessible for cleaning.

62. The laser diode array of claim 53, further including potting material placed generally around said heat sinks.

63. A method of manufacturing an individual laser diode package to be used in a laser diode array, comprising the steps of:

providing a laser diode bar;

providing a heat sink having upper and lower portions;

providing an electrically insulative substrate;

soldering said laser diode to said upper portion of said heat sink so as to leave a surface of said laser diode opposing said heat sink exposed; and

soldering said insulative substrate to said lower portion of said heat sink.

64. The method of claim 63, wherein said soldering steps occur substantially simultaneously.

65. The method of claim 63, further including the step of adding a solder layer to said exposed surface of said laser diode opposing said heat sink.

66. The method of claim 63, further including the step of applying a solder layer to exterior surfaces of said heat sink.

67. The method of claim 66, further including the step of allowing said solder layer to solidify on said heat sink.

68. The method of claim 66, wherein said steps of soldering said insulative substrate and said laser diode include the steps of contacting said insulative substrate and said laser diode to said solder layer of said heat sink and heating said heat sink.

69. The method of claim 68, further including the step of applying a solder layer to said exposed surface of said laser diode.

70. The method of claim 69, wherein said solder layer on said exposed surface of said laser diode has a lower melting temperature than the solder used for said steps of soldering said laser diode and said insulative substrate to said heat sink.

71. The method of claim 63, further including the step of cleaning said laser diode after said soldering steps.

72. The method of claim 71, wherein step of cleaning said laser diode includes spraying acetone on a reflective and emitting surfaces of said laser diode.